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Tools For Ear Training Pedagogy

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Abstract

Ear training is a captivating subject for musicians, whether they are seasoned professionals or pursuing music as a hobby. Occasionally, possessing a refined musical ear can be perceived as somewhat elusive or even become a point of competition among musicians. There is a prevailing belief that having a keen musical ear, including perfect pitch, is an innate gift— one either has it or does not and this is a topic of discussion forever.

This thesis makes enquires and explores various aspects such as what to practice for ear training, the turning points in learning it, learning strategies and behaviors of students and the feasibility of developing musical ear as an adult. It also raises a question whether having good musical ear is really an innate gift as most of the people believe. Furthermore, the research navigates through the notion that early childhood exposure to music might be a prerequisite for developing a strong musical ear. It investigates whether it is indeed too late for individuals who have not started their musical journey from an early age.

For this thesis, through an extensive examination of the subject and qualitative research that was conducted by interviewing thirteen music educators, professionals, and experts in a semi-structured interview format, this thesis aims to provide a comprehensive overview of the role of ear training pedagogy in shaping well-rounded musicians, learning, and teaching processes, methods, tools, learning strategies and its impact on the development of musicians.

The result of this study suggests that ear training is a skill that can be cultivated through dedicated practice. Although it is undoubtedly a gradual process, the pace of improvement hinges on the consistency of one's practice routine and learning strategies. Regardless of whether it is considered a natural talent or not, the journey of ear training is open to anyone willing to invest time and effort into regular practice. Having struggled with ear training myself, I always sought others' experiences. I believe this thesis will be a valuable resource not only for music students but also for anyone interested in music, regardless of their instrument.

Keywords/tags (subjects)

ear training, music theory, pedagogy, musical ears, perfect pitch, relative pitch, learning strategies

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1 Introduction

Ear training is an essential component of music education that enables musicians to develop their listening skills, improve their musical comprehension, and enhance their overall proficiency. Whether in classical, jazz, rock, or any other genre, musicians often rely on their aural skills to understand, interpret, and create music. Ear training, being an integral component of music education, encompasses a wide range of activities and exercises designed to sharpen a musician's ability to perceive, analyze, and reproduce musical sounds accurately. Fundamentally, ear training is the process of developing relation between musical elements such as rhythm, melody, and harmony with notations by which music is represented (Horacek & Lefkoff, 1989, p.1).

Musicians, and pedagogues have shared their experiences regarding the importance of ear training:

Over the years, many aspiring musicians have asked me what is the most important aspect of music to work on. Usually, they expect me to say “groove”, “technique”, “reading”, “theory”, etc. While these are all important chops to have together, I think the most valuable asset that a musician can have is a well-developed ear. If you were a painter, your most important sense would be your vision. You would need well-trained eyes in order to recognize these things like color, composition, shapes, balance, etc. Once you were able to recognize these things at work in other paintings, you’d be much better equipped to put them together and make them work for you. So it is with music, too. (Willis, 1998, p.3)

Willis’s (1998) comprehensive review concluded that it is a fundamental requirement that a musician should be able to hear, at some level, what he/she plays. The comparison of music to other discipline definitely helps to understand the importance of ear training in music. As a student of music, my personal reflection on ear training captures the common sentiments that many musicians experience: kind of “love and hate” relationship. The dual nature of finding it both interesting and challenging resonates with the complexity of the skill to learn and to teach. Ear training, despite its paramount importance in shaping the holistic development of a musician and due to the subjective nature as an art, encounters its unique set of challenges when introduced as a subject in music schools, from both sides: students and teachers. The gradual nature of learning this skill mirrors the gradualness in teaching it.

While there is unanimous agreement on its significance, the methodologies and procedures employed for teaching ear training demand ongoing discussion and analysis among educators.

As an English proverb states, *“They can but bringe horse to the water brinke, but horse may choose whether that horse will drinke”*. A teacher can provide all the materials and information to students but it’s up to students how they are going to use the materials and information. In order to become an expert in any field, one should develop strategic learning behavior coupled with active and creative involvements in considering any strategies (Bandura 1986, Bråten 1996, Chamot 2004, Paris et al. 1983, Siegler 1996, as cited in Blix, H. S. 2014).

Given the multitude of factors involved, stemming from both the teacher's and students' perspectives, coupled with the inherently subjective nature of music, regular conversations among instructors become crucial. As Blix (2014) points out that a continuous dialogue facilitates the exchange of insights into effective teaching methods and materials while talking about learning strategies of students in her article. As music education is a dynamic field, constantly evolving and adapting, an ongoing commitment to updating and refining teaching approaches becomes indispensable for the success of ear training pedagogy. Approach like Student-Centered Musical Expertise (SCME) where each student is considered as a person with unique background, would also be something to try and experiment with (EUA 2019, as cited in Wahlstöm, 2022). In essence, fostering a collaborative and adaptive environment among educators ensures the continual improvement and efficacy of ear training instruction.

As to talk about my musical journey, the encounter with the world of ear training happened much later in my life, rather than during childhood. While it might appear as if my musical journey begun a bit later, the moment when recognition to the deep connection to music occurred, my desire to evolve as a musician became a driving force. Understanding the pivotal role that ear training plays in this journey has been a revelation and continues to be my primary motivation. However, the path to improvement has not been without its challenges.

As Telesco (1991) writes:

One vexing problem for many aural skills teachers is the study of intervals. Do students need to be proficient at identifying random intervals before they can move on to something else? No, I don't believe so. Do they need to be proficient at hearing scale degrees and relationships within the context of a key? Most certainly. Many students do not do particularly well with random interval identification but can do well with other aspects of aural analysis. Nevertheless, the identification of intervals seems to be a major component of many ear training and sight-singing texts, CAI music software, and presumably, most ear training programs. But at the same time, many aural skills teachers question their importance—or the value of the method by which they are most often taught. A similar situation exists with regard to triads. (p.1)

Telesco (1991), in her article claims that being able to hear music is to be able to analyze it. She goes further by saying “being able to analyze, is to be able to understand it”. If one wishes to understand any style of music properly then the skill of ear training, which is also an inseparable part of music theory, is very crucial. She also admits that the learning process to attain this skill called ear training is not an easy one. Despite the fact, it is observed that people want to improve and get better in their field of interest and passion. That is a big motivational factor in itself. Sutton (2015), relates having good musical ear with having more confidence and being able to enjoy music more. Musicians would agree with that.

Experts have come to the conclusion that ear training is the lifelong process of developing the musical sensitivity, awareness, and sharpness of your auditory senses. Once you have developed it to a certain level you will see the advantage of it. If you hear any harmonically complicated music like jazz, with the help of developed ears, you will be able to understand what is really going on in the song. That will make you more confident as a musician and you will be able to enjoy the music more as a listener (Sutton, 2015, p.6).

My metaphor of treating ear training as a war and perceiving it as an enemy illustrates my initial struggle and perhaps the feeling of being overwhelmed by the challenges it presents. The acknowledgment of the fear that arose during this process is a sentiment shared by many learners. The realization that fear can become a hindrance, turning the learning journey into an unwinnable battle, adds a poignant dimension to the narrative.

Fortunately, realization occurred that my negative attitude toward ear training was hindering my progress. I shifted my mindset from viewing it as an enemy to considering it a friend—an acquaintance I wanted to know better. Instead of a battle, an approach towards ear training as a friendly exploration, was initiated, which then gradually reduced the fear. The relationship transformed from a "Love and Hate" dynamic to a "Friendly and Healthy" one. Despite occasional frustration, now it started to be enjoyable.

This transformative journey inspired me to choose ear training as the topic for my bachelor's thesis. Interviews of professionals and experts were conducted, who shared their experiences with music and ear training specially. The wisdom encapsulated in the Chinese proverb, "*To know the road ahead, ask those coming back,*" resonates with my approach to this thesis. Inspired by this principle, I sought to gain insights from experienced educators and professionals in the field of music, particularly in the realm of ear training. As much as these experiences captivate me personally, I am also motivated by the belief that the shared narratives will be of great interest and benefit to fellow music students and enthusiasts.

2 Purpose and objective

The primary aim of this thesis has been to delve into the tools and methodologies for both practicing and teaching ear training, with the overarching goal of enhancing my own musicianship and pedagogical skills, which could be considered as a secondary goal of this thesis.

Music, as an art form, is inherently subjective, introducing an added layer of complexity to the topic of ear training. The diverse ways in which individuals perceive and experience music, contribute to the intricate nature of learning and mastering this art. Teaching it to others in a simple and pedagogically effective manner becomes a challenging task.

As a music pedagogue student myself, my objective in this thesis has been to find out if there are any fundamental strategies, habits, routines or exercises that one should or could follow to get started into this vast world of ear training without getting overwhelmed, regardless of the age. Are there any certain rules to follow? How age of a person affects in

learning ear training and music in general? What are the things that one has to practice regularly in order to get better in ear training? These are some of the questions to which I am trying to find answers through this research.

Since my own experience learning ear training, as mentioned earlier, has been full of “ups and downs” and somewhat similar to “Love and Hate” relationship, as a future music teacher myself, I would love to obtain as much tools as possible in order to be able to give my best to my future students so they would have less bumpy ride in learning ear training. In other words, the purpose of this thesis has also been to find out some sort of guidelines or instructions, if they exist, to build a solid base of ear training for students which would eventually help and guide them to explore and add more knowledge and skills later.

Recognizing the invaluable insights that experienced educators and professionals can offer, the choice to embark on this exploration by seeking their perspectives was made. By delving into their journeys, experiences, and stories, the aim has been to gain a comprehensive understanding of how they navigated the realm of ear training and reached their current positions. This inquiry serves as a pathway toward not only personal growth but also contributing to the broader discourse on effective ear training practices.

As being exposed to ear training only in the adult life, the allure of the structured world of music schools, where every facet of music is systematically taught, has always captivated me. Driven by this fascination, I decided to enroll in a music school to pursue a formal education in music, aiming to explore and understand its intricacies in the best possible way. Upon completing my four-year bachelor's degree, the opportunity to prepare a thesis emerged, providing me with another chance to delve even deeper into the realm of ear training and further explore this captivating subject. This endeavor marks a continued commitment to unraveling the complexities of music education and enhancing my own understanding of this multifaceted art form.

In crafting this thesis, I envision it serving as a valuable resource for those who, like myself, are eager to enhance their musical ears. By offering a collection of diverse experiences and

perspectives, I hope to contribute to the collective knowledge of anyone seeking to embark on a similar journey of musical improvement. This thesis is not just a personal exploration but a shared endeavor to illuminate the path for those who share a passion for refining their musical abilities.

3 Knowledge base for the thesis

3.1 Key concepts of ear training

Pitch Recognition

A musical pitch refers to the perceived frequency of a sound wave, which corresponds to the highness or lowness of a musical tone. In other words, pitch is the attribute of sound that allows listeners to differentiate between tones that are higher or lower in frequency. Collection of different pitches makes a scale (Benward & Saker, 2003). Ear training helps musicians develop the ability to identify and reproduce specific pitches. This includes recognizing individual notes and understanding their relationships.

Interval Recognition

Musicians practice identifying the distance between two pitches, known as intervals (Levin, 1995). This skill is valuable for understanding melodies, harmonies, and chord progressions. Intervals could be harmonic and melodic. In harmonic intervals, musical notes are played at the same time whereas in melodic intervals, musical notes are played one after another.

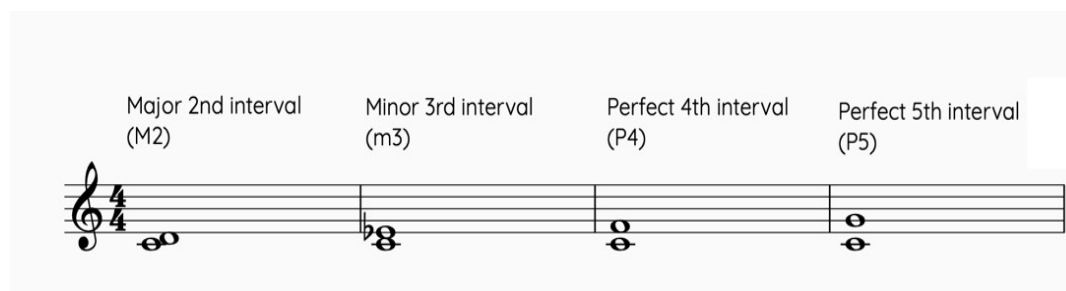


Figure 1. Examples of harmonic intervals.

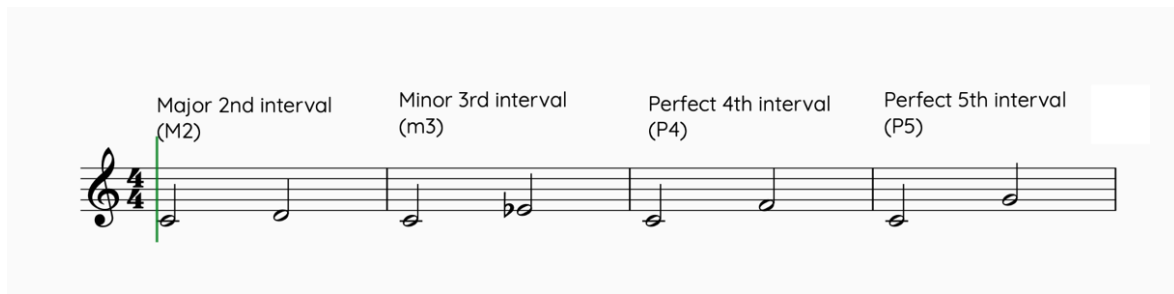


Figure 2. Examples of melodic intervals.

Chord Identification

Benward & Saker (2003) describes chord as a “harmonic unit with at least three different tones sounding simultaneously”. However, in musical genres for example, rock and heavy, two (2) notes chords, named power chords, are very commonly used. Three (3) notes chords are commonly known as triads (Levin,1995). Chords can also have four (4) or more notes as well. Ear training enables musicians to identify and distinguish between different chords and chord qualities, such as major, minor, diminished, augmented, dominant chords etc.

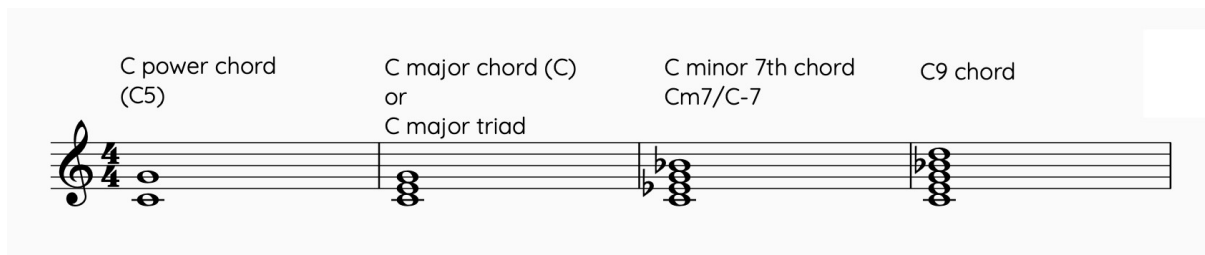


Figure 3. Examples of chords.

Rhythmic Perception

Rhythm can be defined as "the temporal organization of sounds and silences in a musical composition, characterized by recurring patterns of beats, accents, and durations" (Sadie, 2001, p. 1014). It encompasses the interplay between the duration of musical notes and rests, as well as the placement of accents and emphasis within a musical phrase (Bonds, 2006).

Sight Singing

Sight singing refers to the ability to sing a melody at first sight as it is written in a notation sheet (Rogers & Ottman, 2019). Musicians practice singing music at sight without prior exposure to the written notation. This combines pitch recognition and rhythmic perception.

Transcription

Ear training is closely associated with transcription, which is the process of listening to a piece of music and notating it accurately. For example, in genre like jazz, transcription is considered as the very important tool and process to gain jazz vocabulary which includes learning and analyzing the works of expert players (Coryell, 1998). This skill is valuable for learning and understanding music in various genres.

Improvisation

Improvisation is the ability of creating musical ideas on the spot, whether it is a melody, rhythmic patterns or sequences. It is an impulsive act. It could be completely freely or based on given criteria (Backlund,1983). Musicians who can hear and respond to musical ideas in the moment are often more adept at improvisation.

Use of Technology

The use of technology in learning ear training in music has become increasingly prevalent, offering innovative tools and methods to enhance musical education. Technology-enabled ear training platforms provide interactive exercises, personalized feedback, and immersive learning experiences, catering to the diverse needs of learners.

One prominent example of technology in ear training is the use of ear training software and apps. These tools often feature exercises such as interval identification, chord recognition, melody dictation, and rhythmic dictation. Users can practice at their own pace, receive instant feedback on their performance, and track their progress over time (Harrison & McQueen, 2020).

Virtual reality (VR) and augmented reality (AR) technologies have also started to make inroads in music education, including ear training. VR and AR applications can create simulated environments where learners can engage with musical elements spatially and interactively, offering new perspectives on ear training exercises (Gurevich & Klassen, 2019).

Consistent Practice

Like any musical skill, ear training requires regular and focused practice. Daily exercises and consistent listening contribute to improvement over time. There is no short cut here. Practice makes everyone perfect.

3.2 Perfect pitch

Perfect pitch, also referred to as absolute pitch, is an extraordinary and uncommon talent found among certain individuals, notably musicians. It entails the capacity to discern and replicate a musical note devoid of any external aid or reference pitch. Essentially, individuals with absolute pitch can accurately identify or vocally reproduce a specific note, such as C or G or any note, without relying on a reference note. This aptitude transcends various musical instruments and scenarios, often showcased through the precise singing of a note without prior auditory exposure. In essence, it encompasses the ability to recognize a note, chord, or pitch solely through auditory perception, without the utilization of external benchmarks (Sutton, 2015).

The development of perfect pitch appears to involve a combination of genetic predisposition and environmental factors, particularly early musical exposure. It is more prevalent in some families. Even though it is more challenging to develop perfect pitch later in life, some musicians undergo specific training exercises to improve their pitch recognition skills, known as relative pitch. This involves understanding and recognizing the intervals between notes rather than absolute pitch identification.

Musicians with perfect pitch often find it advantageous in tasks such as transcribing music, playing by ear, and communicating with other musicians. However, it's important to note that possessing perfect pitch is not a prerequisite for musical excellence, and many highly

skilled musicians rely on relative pitch and other musical skills. Perfect pitch can be a unique and valuable asset in the musical world, but it's just one of many skills that contribute to a musician's overall proficiency (Chase, 2023).

“If you have absolute pitch/perfect pitch and you live long enough, you will lose it.”

– Abbey Simon

There is an observed trend, particularly among musicians, that the ability of perfect pitch tends to decline after a certain age, often around 50 years old. This decline can lead to a challenging experience, with individuals potentially losing the ability to enjoy playing music altogether. Beato (2021), a music educator and famous youtuber talks about losing perfect pitch in his video about perfect pitch.

While having perfect pitch is undoubtedly a wonderful gift for a musician, the primary goal for the majority is to cultivate a strong relative pitch. This skill allows musicians to navigate musical structures and play by ear, contributing significantly to their overall musical proficiency and enjoyment.

3.3 Relative pitch

Relative pitch is a musical skill that involves the ability to perceive and understand the relationships between different musical notes (Sutton, 2015). Unlike perfect pitch, which involves identifying individual notes without a reference, relative pitch focuses on recognizing intervals, chords, and pitches in relation to a reference note or key.

Key points about relative pitch for musicians

Interval Recognition

Musicians with relative pitch can identify and reproduce intervals, the distances between two notes. This skill is crucial for playing melodies, harmonizing, and transcribing music.

Chord Recognition

Relative pitch allows musicians to recognize and play or sing different chords based on their relationships to a tonic or reference chord.

Transposition

With relative pitch, musicians can easily transpose music into different keys by understanding the intervals between notes, enabling them to play or sing in various tonalities.

Playing by Ear

Musicians with strong relative pitch can learn and play music by ear, listening to a piece and reproducing it without relying on sheet music or specific note names.

Harmonic Understanding

Relative pitch contributes to a deeper understanding of harmony, enabling musicians to grasp chord progressions and harmonic structures within a piece of music.

Melodic Memory

The ability to remember and reproduce melodies is enhanced with relative pitch, as musicians can recall the intervals and relationships between notes.

Relative pitch is considered a fundamental and practical skill for musicians across various genres. It allows for flexibility in playing and interpreting music, as well as effective communication among musicians during rehearsals and performances. Unlike perfect pitch, relative pitch can be developed and honed through ear training exercises, practice, and exposure to different musical contexts in any age of a person.

3.4 Learning phases

Listening begins in mother's womb

Across cultures worldwide, it is widely acknowledged and empirically supported that infants respond to auditory stimuli while in utero, thus initiating the process of listening prior to birth. Music, in particular, has been recognized as an effective medium for prenatal commu-

nication with the unborn child. Research studies have substantiated this notion by demonstrating observable neurological responses in fetuses when exposed to musical stimuli within the maternal womb (Leppänen 2010, 36-37, as cited in Halme, 2022).

In the postnatal period, infants' auditory capabilities continue to evolve, with early exposure to musical training serving as a catalyst for this developmental process. Koppinen (2015) discusses the findings of Virtala's (2015) research in an article published in Helsingin Sanomat, which asserts that even newborn infants possess the ability to discriminate between consonant and dissonant sound qualities. The research methodology employed event-related potentials (ERPs) measured through electroencephalogram (EEG), utilizing the mismatch negativity (MMN) paradigm (Virtala, 2015).

Early childhood exposure to music and its effects on ear training

Early exposure to music during childhood fosters a child's acuity towards fundamental musical elements such as pitch, rhythm, melody, and harmony. These rudimentary components serve as crucial building blocks for the cultivation of ear training proficiency. Young children exposed to music typically internalize intricate musical patterns and structures, laying a foundational framework for recognizing and reproducing musical elements, integral to the process of ear training. Moreover, early encounters with a diverse array of musical instruments enable children to acquaint themselves with distinct timbres and tones, thereby refining their capacity to differentiate and identify specific auditory stimuli, thus fortifying ear training endeavors. Formal enrollment in music education programs tailored for young learners, encompassing initiatives like early childhood music classes or structured music-based curricula within educational institutions, offers systematic learning opportunities that contribute significantly to ear training advancement.

Furthermore, early immersion in varied musical genres and styles nurtures the development of active listening skills. Children exposed to a wide spectrum of musical expressions are more inclined to cultivate a discerning auditory acumen, which serves as a cornerstone for the enhancement of ear training proficiencies.

Studies indicate that musical experiences during early childhood may exert a long-term influence on neural development. Engaging in musical activities elicits stimulation across multiple brain regions, particularly those linked with auditory processing and pattern recognition (Chase, 2023).

In essence, early exposure to music in childhood establishes a conducive environment for nurturing ear training abilities. It initiates the cultivation of auditory sensitivity, the refinement of pattern recognition skills, and the fostering of a profound appreciation for musical elements. These early experiences lay a robust foundation that can significantly enrich individuals' musical journeys in the long term.

Ear training as an adult

Learning music and ear training in adulthood present unique challenges and opportunities. While it is commonly believed that musical aptitude is best developed during childhood, research suggests that adults can still make significant progress in their musical abilities through dedicated practice and training. Learning music and ear training in adulthood is not only feasible but can also be highly rewarding. While there may be differences in learning capabilities compared to childhood, adults possess unique advantages such as greater cognitive maturity and life experience, which can facilitate their musical development.

One study by Fujioka, Ross, Kakigi, Pantev, and Trainor (2006) utilized magnetoencephalography (MEG) to investigate the neural correlates of musical training in adults. They found that even short-term musical training in adulthood can lead to changes in brain activity associated with auditory processing and music perception.

Another study by Zendel and Alain (2009) explored the effects of age on auditory scene analysis, a critical skill in music perception. They found that while older adults may experience some decline in auditory processing abilities compared to younger adults, continued musical training can help mitigate these age-related declines.

Accomplished saxophonist and music instructor from Berklee School of music, Allan Chase (2023) claims that ear training is 100% learned. He refers to the result of a research by Dr. Susan Rogers and Dr. Daniel Levitin which shows the possibilities of every child having perfect pitch, but we lose it as we grow if we don't use it, as other neurological connection in our brain. He claims that early childhood musical training helps retain the listening ability while most of us don't or couldn't continue the musical training.

He adds that regardless of a child retains the perfect pitch or not but as an adult, relative pitch can be developed with practice. He also emphasizes to start at the right level and keeping the right learning speed. Similar thoughts were also shown by all the participants involved in this thesis.

Overall, while learning music and ear training in adulthood may present certain challenges, such as time constraints and established cognitive patterns, research suggests that adults can still make meaningful progress in their musical abilities through targeted practice and training interventions.

4 Implementation

4.1 Method used for the research

For the preparation of this thesis, qualitative research was conducted between November and December of 2023. In addition to the studies of various books, articles, journals, thirteen experts in the field of music from Finland were interviewed. All the interviews were conducted in Finnish language, with the exception of two conducted in English. Each session was recorded for thorough data collection. Parts of the conversations were carefully transcribed and used in this thesis. (More about transcribing in chapter 4.2).

Kallinen & Kinnunen (2021), describes qualitative research as a process which includes the analysis of different sources with the consideration of theoretical aspect regarding the topic. Therefore, the research conducted in this thesis can be considered as qualitative research.

As a significant means of gathering data for this research, semi-structured interviews were conducted with all the participants. In semi-structured interview, specific questions were prepared beforehand and asked in more or less same arrangement (Kallinen & Kinnunen, 2021). Interviewee in this case can answer freely and conversation can take different turns. Questions asked in the interviews for this thesis are shown in page 46.

Through the utilization of semi-structured interviews, the primary motive was to conduct further research on the topic at hand. This involved the intention, as also discussed in chapter 2, to not only gain a deeper understanding but also to formulate a structured system or set of activities. These would serve as practical tools to be employed in the future, with the aim of enhancing and developing outcomes and eventually advancing towards loftier objectives. The term “development” can be defined as a well-planned action implemented to achieve a well-defined and targeted goal (Toikko & Rantanen, 2009, p.14). Hence this thesis could also be considered as a research and development activity/action in the study of ear training pedagogy.

The methods and procedures used in this research are with the aim to delve into the interviewees’ experiences, challenges, and strategies related to the cultivation of a fundamental skill for musicians: ear training. Continuous efforts have been put during the interview through meaningful questions and friendly and healthy conversation, to gain insight into their methods for keeping this skill consistently refined and sharp. Of utmost importance was understanding their teaching approaches, exploring how they incorporate ear training into instrumental instruction, and examining the role of this skill in their professional lives. Every interview proved to be a source of inspiration, and over the course of those two months, invaluable knowledge and insights were gained.

4.2 Sources of materials and it’s analysis

A plethora of books, articles, and other thesis related to ear training were also studied which were found in the library of Finnish Music Campus in Jyväskylä and in the main library of Jyväskylä city. Intense online search was also made with an intension to gather journals and articles regarding the topic. Search engines like Google and Google Scholar were mainly

used for this purpose. Key words for example, “musical ear training”, “music pedagogy”, “music theory”, “sight singing”, “sight reading”, “thesis on music”, “ear training pedagogy” were used to search the materials online. Online searches were done both in Finnish and English language and materials in both languages were studied.

My earnest pursuit led me to explore an extensive array of materials sourced globally, aiming to cultivate a profound comprehension and insight into the advancements made by others in this field. Nevertheless, my primary focus centered on engaging with individuals whose contributions have captivated my attention over the past years. I sought to pose meaningful questions about ear training to those whom I have closely followed and whose impactful works have been a continuous source of inspiration for me.

Thus, I engaged in interviews with thirteen seasoned music educators and musicians hailing from Finland. These individuals boast not only extensive experience in imparting musical knowledge over decades but also actively contribute to the musical landscape through regular performances as accomplished artists. The scope of their educational endeavors extends beyond the instruction of their primary instruments. Most of these educators are multifaceted in their roles, involving themselves in the pedagogy of various subjects such as ear training, music theory, rhythms, and group-oriented classes like band ensembles. Furthermore, their dedication to musical education is evident in their involvement in conducting workshops, showcasing a comprehensive commitment to nurturing musicianship across a diverse spectrum. Because of these strong reasons, those thirteen participants were chosen.

As mentioned earlier in chapter 4.1, parts of the interviews are transcribed carefully and used as a primary resource for this qualitative research. Qualitative resources are usually conversations or interactions between two or more people and transcribing is the process of transferring those conversations into a written form (Kallinen & Kinnunen, 2021). Thus, transcribing is the key factor when it comes to handling and analyzing the qualitative resources. It is a technical action that requires time and precision. Usually in qualitative research, transcribing happens at the beginning phase, which was also the case in the preparation of this thesis. Kallinen & Kinnunen (2021) claim that transcribing the materials at the beginning of

the research process offers the researcher an opportunity to get familiar with the resources which eventually helps to make different observations and interpretation regarding the subject. This happened to be very true in my case while preparing this thesis.

A crucial question a researcher often faces when it comes to transcribing is, “how far you want to go and how accurate you want to be in transcribing?” The answer to this question depends on few factors. For example, nature of the questions asked in interview, goal, purpose and objective of the research, nature of resource analysis procedures, interest of the researcher whether it is in the content of the interview or conversation/interaction during the interview. For the purpose of this thesis, priority was given to the content of the interview rather than anything else. Information that came out from interviewees during the interview process were of utmost importance and this was taken into serious consideration during the process of transcribing.

All of the interviewees for this thesis share the distinction of being multi-instrumentalists, showcasing not only a profound understanding of their primary instruments but also a mastery of additional ones. Interestingly, for those beyond the realm of pianists, the piano emerges as a common secondary instrument, often playing a pivotal role in their musical journeys.

The diversity of their instrumental backgrounds is striking, ranging from drums, flute, saxophone, guitar, bass, violin, clarinet, to more. Some have delved into the intricacies of orchestral and big band arrangements, functioning as arrangers for these ensembles. Notably, a few have a history of working as arrangers in their professional careers.

As a guitarist myself, my intention in conducting these interviews was not solely to engage other senior and expert guitarists but to encompass a spectrum of experienced professionals with varied primary instruments. While guitarists were included, the emphasis was on inviting professionals from different instrumental backgrounds. The guitarists selected for this thesis possess a breadth of expertise that transcends the boundaries of their instrument, reflecting their profound impact on both the musical and pedagogical realms.

Each interviewee featured in this thesis has etched their mark on the music landscape, garnering admiration not only within the borders of their country but also internationally. Their stories were sought after because of the richness of their experiences and the potential contributions they could make to illuminate various facets of ear training from a pedagogical standpoint.

5 Results

5.1 Learning Strategies in Ear Training

“How to learn and teach ear training effectively?” is a common question. As mentioned earlier, music being of a subjective nature, it is observed by many teachers and instructors that it is crucial to have a proper system to learn ear training. Researchers generally concur that for students to effectively oversee and guide their own learning processes, they require a solid foundation of knowledge, motivation, and effective learning strategies (Alexander 1997). These three factors are seen as interconnected, meaning that if students lack motivation, their commitment to learning strategies is likely to diminish. In the case of music students, their strategic efforts often revolve mainly around mastering their instrument's performance. Consequently, other academic subjects like ear training and music theory might receive lower priority, leading to a less concentrated focus on knowledge, motivation, and learning strategies in these areas.

Learning strategies encompass the cognitive processes and actions students employ to attain particular learning objectives. Recognizing and instructing effective learning strategies stand as fundamental tools for educators in facilitating students' development into skilled musicians. This necessitates teachers' understanding of students' individual learning methodologies and how to effectively address them. “Good teaching includes teaching students how to learn, how to remember, how to think, and how to motivate themselves” (Weinstein & Mayer 1983:3, as cited in Blix, H. S. 2014, p.98).

Instructional approaches in ear training have garnered attention, evident in both literature exploring teaching methodologies and research delving into ear training and sight-reading

(Blix & Bergby 2007, Karpinski 2000). Conversely, the investigation of learning strategies employed by music students in their ear training practice remains relatively scarce in music pedagogical research. (Lake 1993, Potter 1990). As a music student and teacher myself, I fully agree with that statement.

The predominant body of research on learning strategies underscores the critical significance of employing self-regulated strategies in learning and developmental processes. (Bråten 2002, Chamot 2004, Oxford 1990, Paris et al. 1983, Siegler 1996, Weinstein & Mayer 1983, Blix, H. S. 2014). In summary, effective learners employ a wider range of strategies more effectively than their less proficient counterparts. Research suggests that these strategic learners excel in choosing the most appropriate approach for a given task. The development of strategic learning is shaped by factors such as developmental stages, instructional methods, and the learner's motivation and existing knowledge. From a socio-cognitive viewpoint, the evolution of self-regulation marks a transition from imitating others to independent problemsolving (Bandura 1986, Bruner 1996, Dreyfus & Dreyfus 1986).

Below, participant 1 recalls his strategies regarding how he learned ear training:

During my studies we had a basic ear training. It was also like a jazz ear training thing as well. I did learn something from that. But I was still bad at it. It was not that good. Sight singing and things I couldn't really sing. But I noticed that I learn much more by forcing myself to transcribe. The other thing, this is the only way to progress as a jazz musician. So inadvertently, I was not thinking it was ear training but that was. That was my method for ear training and sort of teaching myself that. (Participant 1)

Participant 1 also recalls past days when there was not any technology to support ear training. He had to come up with his own exercises to practice. For example, by recording intervals in some recording devices and listen to it back again and figure out what it was.

I wish we would have those applications and things. Would have been much easier for learning simple things like intervals. Just having something that would play over and over, and you can do that, and you can get score. And ok now I am 85% cool and trying to get to 90% next weekend. Those kind of things would have been really good help but we had nothing like that. (Participant 1)

He continues,

I was recording intervals for like half an hour so I wouldn't be able to memories what I was doing then, and I would say what the interval was. I kind of made my own method for learning myself. (Participant 1)

So, in today's modern day, ear training mobile applications and websites are of big help to practice and develop ear training faster than before. It is a great and one of the very effective learning strategies.

Similarly, participant 9 tells his story about strategies he used:

Ear is a thing that can really be developed if you have a proper system for how to process what you hear. In a way, it is very important to understand what you hear. If you don't have that understanding, majority of people think that they can't hear. In fact, everybody hears but they just don't know how to process it. (Participant 9)

Participant 9 elaborates more:

In fast solfa it's about how it feels, not about intelligence. If you end up calculating or using math or using your intelligence, human intelligence is slow. Computer calculates faster than human, but human is better in feeling things. Feelings are instant and much quicker among humans. (Participant 9)

Participant 9 did a quick experiment with me during the interview. He played few chords quickly in guitar and asked me to answer whether it was major chord or minor. After me answering, he asked:

Participant 9: *Did you calculate?*

Me: *No.*

Participant 9: *Did u answer based on how the chord felt to you?*

Me: *Yes.*

Participant 9: *That's why you were fast, and you didn't make any mistakes. But if you would have started to calculate where the root note is, what kind of third, major or minor, it would have taken at least 10 seconds per chord to find out what it is. The reason why you were quick and right every time was because you have developed the feeling of the sound. If you hear certain sound, it would be like a person whose name you already know. It is like when you see your teacher's face, you know its him. You know his name and it is in your mind. You don't have to think anything. It is just what it is. It just is.*

Also, participant 6 recalls doing exercises with friends where a saxophonist friend plays something, and he had to follow and other way around. Another effective training strategy he recalls was with a singer. He played some chords and singer had to create some melody and other way around.

Despite all of those exercises and learning strategies, participant 6 also talks about the real band stand situations being the perfect and most effective place to learn not only ear training but other aspects of music also.

I remember that all my biggest changes and development regarding ear training had happened in the real playing situations. I remember those band situations when I was in a band and trumpeter stylistically played flat fifth (b5) or sharp eleventh (#11) over a dominant chord and I heard that for the first time. I was like now I hear it, now I know what it was. Those were those moment of realization. (Participant 6)

Participant 6 continues:

...it is a slow process and if I would have waited with the thought that I have to hear first before I play, I would still be waiting and wouldn't have played at all. I just had to begin doing it slowly and little by little I started to hear more. (Participant 6)

Participant 6 highlights the fact that one has to feed their ears with certain sounds again and again, then ears become familiar with that sound and eventually would recognize it instantly.

Participant 11 introduced novel insights regarding the strategies employed in learning ear training. She highlights that ear training extends beyond merely identifying individual notes or chords; rather, it encompasses recognizing the distinctive musical phenomena prevalent across various genres. Using jazz music as an example, she underscores the presence of unique stylistic elements and recurrent harmonic or rhythmic patterns that distinguish jazz from other musical genres. Similarly, genres such as rock, blues, and classical music possess their own identifiable characteristics. Participant 11 concludes that developing the ability to discern and perceive these phenomena is an integral aspect of ear training.

In conjunction with Participant 12, numerous other participants in this research, drawing from their dual roles as both students and educators, have highlighted a prevalent challenge: many individuals encounter difficulty in accurately perceiving and identifying sounds emanating from instruments other than their primary one. A common issue identified is the struggle to discern bass notes effectively. Furthermore, participants have recounted personal challenges in hearing and distinguishing sounds produced by instruments such as the piano and saxophone.

So, in addition to the primary instrument, it seems to be beneficial to try and get familiar with other instruments to some degree to improve musical ears. Piano is commonly used as a chosen instrument in ear training and theory classes.

Based on the findings of this research, it can be concluded that in ear training, as well as in any learning endeavor, the content learned, the methodology employed for learning, and the mechanisms for retaining acquired knowledge are all equally pivotal factors. Furthermore, one could posit that the latter two factors hold even greater significance than the content itself.

5.2 Role of singing in Ear Training

While singing is often emphasized in ear training, it can pose a significant challenge for many music students. General hesitation or insecurity about one's voice may lead to shyness. However, the common practice in developing a musical ear involves reproducing the sound or pitch heard, typically through singing, humming, or whistling. Despite potential reservations, singing serves as a valuable tool in honing musical ears. Willis (1998) recalls his experience in his book "Ultimate ear training for guitar and bass":

My Voice? Don't worry, you don't have to develop an outstanding singing voice in order to have a good ear; I'm a great example of that. My singing career (background vocals) lasted one rehearsal. The vocal line went up, and the bass line went down. I was a one-man train wreck and was kindly thanked to not sing anymore. Think of your own voice as a kind of measuring stick for notes. You only need to be accurate

enough that you can imitate and evaluate what you hear. Once that skill is developed, you'll have a self-contained way of understanding what you hear that's independent of your instrument. (p.3)

By addressing these challenges through focused and consistent practice, musicians can enhance their musical ears and develop a more profound connection with the music they create or perform. All the participants for this research were asked about the role of singing and its importance in developing ear training. Here are few:

Me: What do you think about singing? How important it is for student to sing along?

Well, if I had my own school, everybody would have to sing in a choir. If you don't have a voice, then the instruction would be to go and practice and come back when you have a voice. Because I think that would be the only way to teach harmony, would be to teach in a choir and teach melody in choir, to teach group how to play responsibly in a group. That's one of the reasons why I like choirs so much because you go and listen to a good choir, you can see from everybody's expression nobody is thinking about me the soloist, me, me. Everybody is thinking about the group, the collective sound of the choir, the harmony, how the harmonies join to create the incredible sound of a well-tuned, good singing choir. I think this is a long answer to your question, but I think singing is really, really important. (Participant 3)

Participant 3 continues...

Yes, there are some people that don't sing, of course and they can be great player. I wouldn't say that you would never be a great player unless you sing also great. I mean, I am not a great singer, but I can do things with my voice that I can then replicate on my instrument. (Participant 3)

Participant 1 also emphasizes on singing the melodies in order to transcribe which he believes is the key method to develop listening skill.

At the point, I believe my teacher was saying that you gotta sing along with the solos and get in your ears first. Then I heard that continuously in any masterclass. When I am listening to pedagogues talk about how to teach transcription, they almost always talk about that. (Participant 1)

Participant 1 continues...

“Singing along is really good because you don’t have to be thinking about rhythm and notes but if you start to sing along with it, you will get it in your spine. It goes really deep into you even if you can’t write it 100%.”

.... some of the Charlie Parker stuffs, those rhythms don’t exist but if you can hear it and duplicate it in your instrument, that is even more important than writing it out 100% correctly. (Participant 1)

Participant 9 was also asked the same question.

Me: You mentioned about producing the sound one is hearing, either by singing or by playing the instrument, how important it is to sing to improve ears?

Participant 9: “It is not relevant at all as long as you are producing that sound somehow. You can produce the sound through an instrument. I didn’t sing at all at that time for 4 years when I was transcribing but I played. And this is what I do in my classroom that I look for what works with whoever. It is helpful if you sing because in many musical situations, singing is the fastest way of communication about musical ideas. It doesn’t have to be as good as if a soloist singer would sing. You can communicate your idea by singing so it can be identified.”

Then participant 9 gives an example by elaborating a scenario where a musician is sharing a musical idea to another musician by singing. He sings some idea and continues:

“...ok now you understood what I am asking you to play and that’s how it should sound.”

Me: Exactly. It doesn’t have to be beautiful voice and beautiful singing but producing sound, which is in tune, how important it is?

Participant 9: “For example, even in band situation or as a conductor, I don’t much care how clean the singing is or clean intonation because you can read the notes from the notation and musicians plays in tune and they understand what I am communicating. This is one of the functions of solfège is to transfer the musical thought from one person to another. At the beginning phase when you are learning basic things, I never force anyone to sing because singing could be very difficult thing. People could feel discomfort and think that the singing sounds awful. So, it is ok to play the notes by keyboard or piano and same time say the interval numbers out loud. I play the notes and say what it is, 5, 4, 1,2,3,1,7,6,4. As long as I produce the pitch so that you hear how it sounds, and I say out loud what it is. It is useful to sing the right pitch and get all the information from one source, but it shouldn’t be a barrier to anyone. As a

teacher, my way is to find a way that suits you and that is the right way. If you understand why singing is useful and find motivation, then you can always practice singing more later."

Participant 4 also emphasize strongly on singing when was asked about strategies to improve ears.

Me: What kind of strategies would you recommend to students who want to develop ears and become better musician?

Participant 4: "First of all, sing all kind of music where there is melody. May be not rap music or very modern RnB which is more rhythmic in style. Sing as much as you can. Accept your voice and sing even in public places even though all of us hate our own voice. If you dare to sing in front of others and look if you can find the right notes without the support of the record in the background. So, sing all the materials and sing as much as you can. Then when you develop the knowledge and skill, start singing harmonies, background lines. Sing harmonies from thirds (3rd) if it is a tonal music or even modal. May be at the beginning, upper harmonies or may be from fourth down depending on the style of music. So, singing melodies and of course singing bass lines. I have done lots of harmonies and singing has been the pivotal thing and it covers all. So, I recommend students to sing simple, normal melodies, based on major and minor keys."

Participant 6 has also showed his emphasis on singing but he also mentioned the greater importance of inner ears which if both go hand in hand, would be of bigger help. To the question about importance of singing participant 6 answers:

It is hard to guess. Of course, it is important but even more important is the inner ears that hears the music. I happened to sing myself as a singer, but I know plenty of musicians who don't sing but still they hear very well. But for me there is definitely a connection between singing and hearing. (Participant 6)

During the interview, participant 12 talks about his experience as a teacher where he has noticed very often, especially among young students that they are talented and gifted in playing the instrument, playing in a band situation and all but when it comes to singing a note or a scale they just played, they just cannot sing. As a teacher, he believes this is a big problem and challenge in music schools. In addition, it could be a big challenge for student

to graduate from school. That is why he encourage singing in his class in such a way that students would not feel stressed or feel low hesitation. He continues with the intension of making the so-called monster word “theory”, less fearful and making it more practical, useful and quicker for students especially in the band stand situation. And he believes, practicing singing is one of the important tools for this purpose.

5.3 Singing melodies with definite syllable

While singing, it is important to control the quality of the tone and intonation. Singing some definite syllable for every note is commonly used technique for this purpose. In different part of the world and in different cultures, different syllables are used to scale degrees. Sol-fege (sol-fa) system is one of them (Berkowitz, Fontrier, Kraft, et al. 2011).

1.	C	D	E	F	G	A	B	C
2.	Do	Re	Mi	Fa	Sol	La	Ti	Do
3.	Sa	Re	Ga	Ma	Pa	Dha	Ni	Sa
	(सा)	(रे)	(ग)	(म)	(प)	(ध)	(नि)	(सा)

(Number 3, is used basically in eastern classical music/hindustani music. Mostly in countries like India, Nepal, Pakistan.)

Figure 5. Major scale with different syllables.

Fixed “Do”

This is the system where musical notes C, D, E, F, G, A, B are called *Do, Re, Mi, Fa, Sol, La and Ti*, respectively. When singing a melody, each note is sung by its name without considering any accidental. Nations employing this approach have achieved notable success, likely due to the rigorous initial training provided to their students (Berkowitz, Fontrier, Kraft, et al. 2011).

Movable “Do”

This is the system where regardless of the key signature, “Do” always represents the tonic or first degree of the scale (Berkowitz, Fontrier, Kraft, et al. 2011). Here is an example of an ascending chromatic scale: *Do, Di, Re, Ri, Mi, Fa, Fi, Sol, Si, La, Li, Ti, Do*

Here is an example of a descending chromatic scale:

Do, Ti, Te, La, Le, Sol, Se, Fa, Mi, Me, Re, Ra, Do

Number system

This is the system where numbers (1,2,3...) are used instead of syllables. In this system there is no change in numbers in chromatic scale (Berkowitz, Fontrier, Kraft, et al. 2011). Otherwise, this is similar to “Movable Do” system.

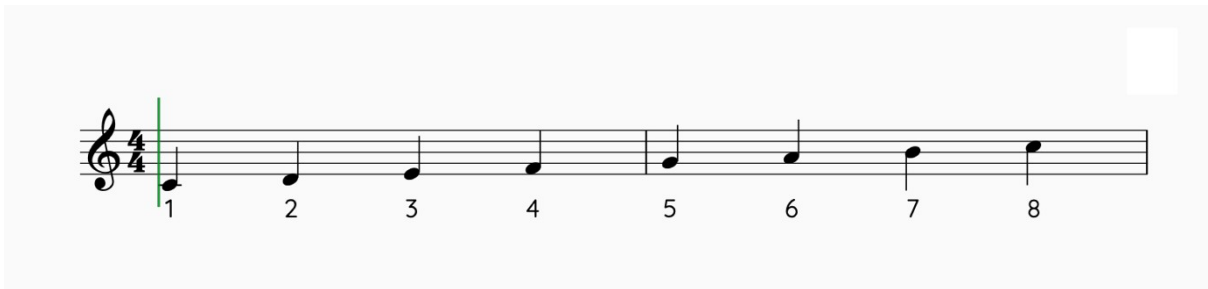


Figure 6. Major scale with number system.

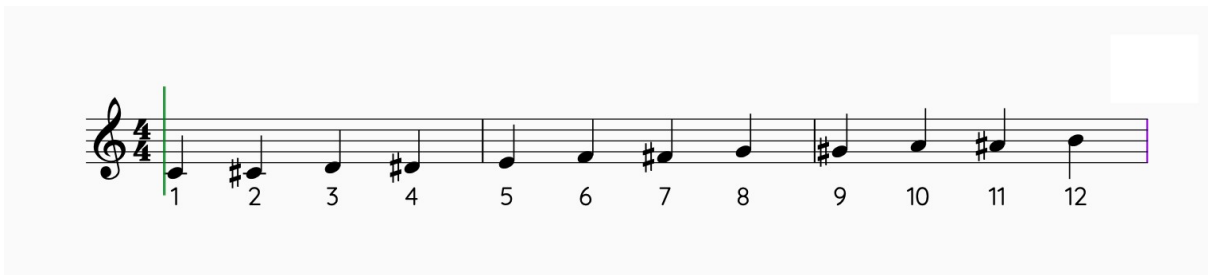


Figure 7. Chromatic scale with number system.

5.4 Challenges in learning Ear Training

Developing musical ears through ear training can be a rewarding but challenging process.

Ear training is the practice of honing one's ability to identify and interpret musical elements by ear, such as pitch, intervals, chords, and rhythms. Here are some common challenges associated with developing musical ears:

Pitch Recognition

Challenge: Identifying and distinguishing between different pitches can be difficult, especially for beginners.

Solution: Regular practice with pitch recognition exercises, such as singing or playing back single notes or melodies, can help improve pitch discrimination.

Interval Identification

Challenge: Recognizing the distance between two pitches (intervals) can be challenging, as there are various intervals with different tonal qualities.

Solution: Practice interval recognition by associating each interval with a familiar song or mnemonic. Gradually increase the difficulty by incorporating more complex intervals.

Chord Recognition

Challenge: Identifying and distinguishing between different chords by ear can be complex, especially with extended or altered chords.

Solution: Start with basic triads and progress to more complex chords. Use chord progressions in songs to reinforce recognition. Practice chord identification in both major and minor keys.

Rhythmic Accuracy

Challenge: Grasping and reproducing complex rhythmic patterns accurately by ear can be a significant challenge.

Solution: Break down rhythms into smaller components, tap along with a metronome, and gradually build up to more intricate patterns. Listening to a variety of music styles can also enhance rhythmic understanding.

Melodic Dictation

Challenge: Reproducing a melody accurately after hearing it can be challenging, as it requires a strong connection between auditory perception and motor skills.

Solution: Start with simple melodies and gradually progress to more complex ones. Focus on recognizing intervals, rhythms, and overall contour. Transcribing melodies regularly can improve melodic dictation skills.

Tonal Memory

Challenge: Retaining and recalling pitches or musical patterns for an extended period can be difficult.

Solution: Regularly practice recalling and reproducing musical elements from memory. Use tools like ear training apps or software that provide progressive challenges to improve tonal memory.

Relative Pitch Development

Challenge: Developing the ability to identify pitches and intervals in relation to a reference pitch (e.g., a tonic or key center).

Solution: Use exercises that involve identifying pitches or intervals within a specific context or key. Singing or playing scales and arpeggios in different keys can also strengthen relative pitch.

Consistency and Patience

Challenge: Progress may be gradual, and staying consistent with ear training exercises can be challenging.

Solution: Establish a regular ear training routine and be patient with the process. Consistency over time is crucial for improvement.

5.5 Importance of Transcribing

Transcription emerged as a central theme throughout the discussions with all thirteen participants in this research, each emphasizing its crucial role in nurturing musical ear development. Consequently, it is evident that transcribing stands as a pivotal aspect of teaching ear training, one that cannot be overlooked or underestimated. Despite its undeniable importance, participants also acknowledge the inherent difficulties and challenges associated with transcription, particularly within the realm of music pedagogy. Participant 4 mentions having a separate and dedicated course for students that deals with transcription. His perspective sheds light on the importance of transcribing.

It is important. In melody dictation, teacher usually gives the melody and students will have to write it down which might not touch your heart musically. But when you yourself transcribe something, there you can choose what you want and would also fulfill your musical hunger. So, transcription is a process of building your musical "me" image. You get the freedom to choose what you want to transcribe. Sometimes also might be the case that student chooses unnecessarily difficult task like something from "Birds of Fire" album by Mahavishnu Orchestra and couldn't recognize nothing. Then as a teacher you might need to say to student to take something easier. Otherwise, the student would get stuck with the difficult tune and couldn't want to transcribe anything for rest of his/her life. (Participant 4)

Another participant (participant 12) raised the issue of transcription, using a metaphorical illustration involving a home builder. In his view, improvisation, particularly in the context of jazz music, entails the generation of melodies employing scales. While scales are typically covered in music education, there is often a lack of instruction on the process of melody creation.

It is like giving a student of home building all the tools and materials to build a home but not teaching him how to build the home. (Participant 12)

According to Participant 12, the process of creating melodies, akin to building a home, can be best learned through the study of existing melodies. This entails engaging in transcription, where one analyzes and learns from the works of others, particularly experts in the field. Participant 12 underscores the importance of transcribing solos as a means to enhance improvisational skills and overall musical proficiency.

Participant 7 recalls a situation where he hears a wonderful guitar playing from another room in the school. He runs to see who this guy was. He praises the guy's playing and as a curiosity asks what did he do to sound so good. The other guy replies that he has been transcribing songs by ear in regular basis and just recently has transcribed the whole album of the band AC/DC and that is how he got better at playing. Participant 7 adds that since then he also started to transcribe in regular basic and encourages students to do too.

Participant 7 concurs that for novice students, transcribing music can pose a significant challenge. He emphasizes the pivotal role of a teacher in overcoming this obstacle, highlighting the importance of the teacher's ability to present transcribing in a manner that encourages students to engage with their musical ears without apprehension. As a teacher himself, Participant 7 endeavors to integrate ear training into his instructional approach as effectively as possible, recognizing its importance in the development of musical proficiency.

I give many transcriptions homework to students for example, to figure out some solo by ears. Even in band teaching, I almost never give notations. I encourage them to figure out their own parts by listening and we rehearse next week. Also, to my guitar students, I tell them to learn some solos, not necessarily have to write the notations but just to be able to play along with the record. (Participant 7)

While all participants unanimously acknowledged the significance of transcribing in musical development, participant 5 introduced a thought-provoking perspective on this practice. He argued that transcribing serves a broader purpose beyond simply deciphering correct notes

and tempo. According to participant 5, transcribing is a great tool to extract and incorporate musical ideas from solos into one's own playing.

In essence, Participant 5 emphasized that transcribing is not solely about replicating what is heard, but rather about understanding the underlying concepts and techniques employed in the music. By doing so, transcribing becomes a valuable tool for honing improvisational skills, allowing musicians to internalize and apply new ideas within their own musical expression. This viewpoint underscores the multifaceted nature of transcribing, highlighting its role not only in technical proficiency but also in fostering creativity and musical innovation.

Participant 5 highlights a pertinent concern regarding the modern approach to transcribing music, particularly through platforms like YouTube. While acknowledging the value of transcribing solos available online, he cautions against relying solely on this method. He underscores the risk of neglecting the development of improvisational skills, especially in music genres like jazz where improvisation is integral.

Drawing from his experiences with students, Participant 5 illustrates a common scenario: individuals adept at reproducing complex solos note-for-note may struggle when asked to improvise or play something different. This observation underscores the importance of a well-rounded musical education that goes beyond mere replication of existing material.

Indeed, while transcribing is undoubtedly beneficial for ear training, participant 5's insight raises awareness about the potential limitation of focusing solely on this aspect. It serves as a reminder of the need to balance various musical skills, including improvisation, to foster comprehensive musicianship.

5.6 Transcribing and music theory

Nearly all participants emphasized the significance of integrating music theory with the practice of transcribing. Participant 2 shared an illustrative anecdote wherein a student presented a solo transcription devoid of any chord annotations. This experience led participant

2 to recognize that the transcription solely comprised a sequence of notes without conveying the harmonic context underlying the music.

This observation underscores the importance of understanding the relationship between melody and harmony in transcriptions. By incorporating music theory into the process, musicians gain a holistic understanding of the musical structure, enabling them to perceive the broader context of the music they transcribe. This integration not only enhances ear training but also facilitates a deeper comprehension of the music's intricacies.

In essence, the combination of transcribing with music theory empowers musicians to grasp the bigger picture of the music they study. It enables them to discern not only the individual notes but also their harmonic relations and implications, fostering a more nuanced and comprehensive interpretation of the music.

6 Conclusion

Ear training encompasses a broad and multifaceted domain, characterized by its depth and subjectivity. As one delves deeper into this field, new discoveries continually emerge, a testament to its intricate nature. This thesis explores the influence of musical exposure from prenatal stages through adulthood. While the research suggests a correlation between early musical exposure and heightened auditory acuity in individuals, it is feasible for adults to cultivate enhanced musical ears with dedicated effort and consistent training. While childhood experiences may serve as a foundation for skill development, they do not guarantee proficiency without ongoing dedication. Thus, individuals, regardless of age, can enhance their musical ear through diligent study and disciplined practice.

Moreover, intrinsic motivation is identified as a pivotal factor in this endeavor. However, the presence of a proficient teacher capable of providing effective guidance is equally crucial. A skilled teacher possesses the ability to inspire and motivate students, facilitating accelerated progress towards their objectives. Conversely, a motivated student paired with a skilled teacher can achieve their goals with greater efficacy. Therefore, the collaboration between

motivated students and knowledgeable instructors is pivotal in fostering expedited growth and achievement in ear training.

The real-life band stand situations seem to be another important factor for ear training. It can be concluded from the comments from participants that band stand situations like gigs, shows or jam session are the best place to learn ear training. Especially jam sessions are the place to try and implement what one has learned. It could be a place to test yourself which, without a doubt, would be a valuable recourse and experience.

During all the interviews conducted, two factors consistently emerged as significant: transcribing and singing. Participants unanimously recommended these practices, highlighting their importance in musical development. Consequently, this thesis focuses extensively on exploring these topics. It aims to present the valuable insights, techniques, and suggestions shared by participants as effective methods for ear training, beneficial for both learners and instructors. However, it is essential to acknowledge that transcribing and singing are not the sole means of ear training. Music's subjective nature implies that what works for one individual may not necessarily work for another. Therefore, it is advisable to experiment with various tools and techniques to determine what suits one's learning style best. This approach is highly recommended, considering the diversity of preferences and aptitudes in music education.

Learning any form of art, including music, demands dedication and perseverance; there are no shortcuts. Ear training, in particular, is a gradual process that can sometimes feel daunting. Indeed, mastering this skill may seem like an elusive goal that stretches beyond a single lifetime. Consequently, individuals may encounter frustration and disappointment along the way. Yet, therein lies the beauty of music as an art form: it's endless journey. Unlike reaching a finite destination, music continually surprises and evolves. As the saying goes, "it's not the destination that is important, but the journey." This sentiment resonates deeply in the realm of learning music, especially in ear training.

Throughout this thesis, participants consistently underscore the significance of intrinsic motivation and consistent practice. These elements mirror the essence of the journey mentioned in the proverb. In essence, the pursuit of musical proficiency is not solely about reaching a predetermined endpoint but rather about embracing the ongoing process of growth and discovery.

6.1 Ethicality and reliability of the research

The participants for this research were contacted through email and Facebook Messenger, ensuring a convenient and accessible means of communication. Prior to their involvement, each participant received comprehensive information regarding the research, including its purpose, goals, and expected contributions. This transparent and informative approach aimed to ensure that participants were fully aware of the research objectives and could make informed decisions regarding their participation.

The interviews were conducted over a period spanning from November to December of 2023, employing a mix of face-to-face sessions and virtual interactions via Zoom and Facebook Messenger. This diverse approach aimed to accommodate the preferences and logistical considerations of the participants, ensuring a comprehensive exploration of their perspectives on ear training and music education. All the interviews were conducted in Finnish language, with the exception of two conducted in English. Each session was recorded for thorough data collection and transcribed later on.

In the conduct of this study, a standardized set of questions was administered to all participants. However, the interview process was “semi-structured” and in a conversational manner, strategically designed to foster a comfortable environment conducive to eliciting rich narrative accounts from participants regarding the subject matter. In the context of qualitative inquiry where interviews serve as a primary methodological tool, particular emphasis was placed on upholding the overarching principles of ethical conduct and ensuring the reliability of gathered data. Principles of ethical conduct refers to respect the participant’s human dignity, privacy, self-determination and other human rights (Tutkimuseettinen Neuvottelukunta, 2021).

In the context of this thesis, the identities of the interviewees have been safeguarded, and their names remain anonymous. However, pertinent details about their primary instruments and areas of expertise have been disclosed to provide valuable insights.

Participants	Main Instrument	Other involvements/expertise	Interview Method
Participant 1	Piano	Ensembles/workshops	Face to Face
Participant 2	Saxophone	Composer/Arranger	Zoom
Participant 3	Guitar	Theory/Ear training	Facebook Messenger
Participant 4	Drums	Composer/Rhythms	Zoom
Participant 5	Guitar	Composer/Arranger	Zoom
Participant 6	Guitar	Composer/Arranger	Zoom
Participant 7	Guitar	Ensembles/workshops	Zoom
Participant 8	Piano	Theory/Ear training	Face to Face
Participant 9	Guitar	Theory/Ear training	Zoom
Participant 10	Guitar	Composer/Arranger	Face to Face
Participant 11	Saxophone	Theory/Ear training	Zoom
Participant 12	Bass	Ensembles/workshops	Zoom
Participant 13	Piano	Theory/Ear training	Face to Face

Table 1. Participants' information.

To address the reliability of this research, a substantial number of participants were achieved, ensuring a robust sample size. On average, each interview lasted slightly over an hour, allowing for in-depth exploration of the research questions. The formulation of research questions was deliberate and precise, facilitating participants' ability to provide concrete responses based on their own experiences and backgrounds. Moreover, participants' responses often led to further inquiries, fostering a conversational dynamic during the interviews and facilitating deeper exploration of the topic to yield valuable insights.

All participants in this study have accumulated decades of experience within the field and are widely acknowledged as experts, with some having attained international recognition. Given this considerable expertise and stature within the field, the research benefits from access to highly credible and authoritative sources of information regarding the topic under investigation. Consequently, the study has succeeded in garnering reliable and substantive insights relevant to the research focus.

This four years degree programme has been completed in Finnish language and this thesis is written in English language. None of these languages are my mother language. Thus, an artificial intelligence tool, Chat GPT has been used in few parts of the texts to improve the quality of written English language and to correct the possible grammar mistakes. However, the sole purpose for using Chat GPT has been to deal with situations where long paragraphs written by me, must be summarized and condensed into a shorter paragraph without suffering the loss of the information and messages intended to deliver. For example, topic “Key points about relative pitch for musicians” under Chapter 3.3, topic “Early childhood exposure to music and its effects on ear training” under chapter 3.4, and chapters 5.4, 5.5, 5.6 and 6 are few places where Chat GPT has been used partially in order to summarize the long texts and to make it more understandable, formal and more appealing to the readers.

6.2 Challenges in teaching Ear Training

Teaching ear training, while essential for musicians, can present various challenges. According to this research, specially from the interviews conducted with participants, it appears to be a fundamental fact that ear training involves developing aural skills, which can be highly subjective in nature. Below are some of the conclusions made based on the research regarding the challenges in teaching ear training.

Students may interpret sounds differently, making it challenging to standardize assessments or exercises. In addition, varied backgrounds and experiences of students has a bigger effect on this. Students often come with diverse musical backgrounds and experiences. Some may have had extensive exposure to music from a young age, while others may be beginners. Tailoring ear training to meet the needs of such a varied group can be demanding.

As mentioned earlier, singing is a common practice in ear training. However, some students may resist singing due to shyness, insecurity about their voice, or cultural reasons. Overcoming this resistance requires creating a supportive and non-judgmental learning environment. This was discussed in chapter 5.2 where an experience of participant 12 was mentioned.

Ear training involves grasping abstract concepts like intervals, chord progressions, and tonalities. Helping students understand and apply these concepts without relying solely on theoretical knowledge can be challenging. Integrating ear training seamlessly with other musical skills, such as sight-reading, improvisation, and composition, poses a challenge. Creating a cohesive curriculum that reinforces aural skills in various musical contexts is essential.

In some cases, limited access to technological resources or suitable materials for ear training exercises can hinder effective teaching. Incorporating technology can enhance ear training, but it may not always be readily available.

Ear training often competes with other aspects of music education for limited class time. Finding a balance and ensuring adequate time for meaningful ear training exercises is a perpetual challenge. Sustaining students' interest and motivation in ear training, which may be perceived as less enjoyable compared to playing instruments, requires creativity and varied teaching approaches. Many teachers consider this as one of the biggest challenge teaching ear trainings.

Addressing these challenges involves employing a combination of pedagogical strategies, fostering a positive and inclusive learning environment, and adapting teaching methods to meet the diverse needs of students.

6.3 Role of a teacher

Undoubtedly, in any field, a skilled teacher is akin to receiving a divine blessing for a student. It is widely acknowledged that a teacher holds the power to profoundly influence a student's entire life trajectory. Thus, the role of a teacher is undeniably significant and carries immense responsibility. In the course of this research, all participants were questioned regarding the pivotal role of teachers, particularly in the realm of ear training instruction. Remarkably, their responses echoed similar sentiments, underscoring the profound impact and importance of effective teaching in this domain.

Participant 10 emphasizes the critical role of a teacher in igniting enthusiasm, providing guidance, and offering motivation to students. However, he also underscores the principle that a teacher cannot undertake the learning process on behalf of the student. In the context of teaching ear training, while a teacher can furnish students with the necessary resources for practicing, they cannot dictate what students should perceive. Ear training is portrayed as a personal journey, wherein the student must actively engage in the process. As music is an art form, perception of sound is inherently subjective, further highlighting the individual responsibility of the student in their ear training endeavors.

Participant 9 characterizes the role of a teacher as fueling the internal flame that drives students – encompassing their passion, motivation, and aspirations. A proficient teacher possesses the ability to identify these innate qualities within students and nurture them, enabling the flame to grow exponentially. Participant 9, similar to participant 10, echoes the sentiment that motivation must originate from within the students themselves. Without intrinsic drive or determination, a teacher's efforts may be limited in fostering progress. Similar thoughts were shown by all of the participants when role of a teacher was concerned.

6.4 Improvements and possible further research

This research has focused on ear training through the lens of three fundamental musical elements: melody, rhythm, and harmony. However, it is noteworthy that during the interviews, certain participants also highlighted additional facets of ear training. For instance, dynamic ear training; which pertains to navigating ensemble situations and collaborating with fellow musicians, and sound ear training; which involves refining the timbre and tone of one's instrument and shaping individual sound characteristics, emerged as significant components essential for musical proficiency. While these aspects are acknowledged as crucial for developing expertise as a musician, it is important to note that they have not been specifically addressed within the scope of this thesis. Further research regarding those topics would be worthwhile.

Furthermore, there are also other popular methods used in teaching ear training worldwide, for example, Kodály method, which this thesis has not included. Also, eastern classical music

pedagogue culture has also not been discussed in this thesis. These could be a topic of one separate research.

During the interviews with thirteen experts from the music field, a vast amount of invaluable information was acquired. However, to thoroughly analyze and interpret this wealth of data would have necessitated a substantial investment of time and human resources. Regrettably, due to constraints such as budget limitations and the involvement of a single individual in the completion of this thesis, the examination of certain pertinent information was either limited or not explored in depth. Consequently, this may have impacted the comprehensiveness and depth of the thesis's findings to some extent.

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Appendix 1: Questions for interview

All the interviews were conducted more in a conversational way to get the best out the participants. However, set of predetermined questions were prepared.

Your experience:

- What was your learning process? How did you develop your learning process?
- What were your challenges?
- Did you had your “Aha..” moment in ear training?
- How do you practice ear training these days?
- How important it is to transcribe/sing?

Suggestions:

- How do you teach to your students? What methods do you use?
- How do you motivate your students?
- What is the role of a teacher? How important it is?
- What do you think the challenges are for students these days?
- What do you suggest/recommend to new students?

Benefits:

- How do you use ear training in work situation?
- How a good ear training helps in work situation (playing/ teaching)?

Recommendations

- Any book recommendations regarding ear training?
- Can you recommend anyone else for the interview?